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WAR SPECIAL

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Recommendations to All Physicians With Reference to the National Emergency

I. MEDICAL STUDENTS

A. All students holding letters of acceptance from the Dean for admission to medical colleges and freshmen and sophomores of good academic standing in medical colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. This step is necessary in order to be considered for deferment in Class II-A as a medical student. If local boards classify such students in Class I-A, they should immediately notify their deans and if necessary exercise their rights of appeal to the Board of Appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the State Director and if necessary to the National Director of the Selective Service System. These officers have the power to take appeals to the President.

B. Those junior and senior students who are disqualified physically for commissions are to be recommended for deferment to local boards by their deans. These students should enroll with the Procurement and Assignment Service for other assignment.

C. All junior and senior students in good standing in medical schools, who have not done so, should apply immediately for commission in the Army or the Navy. This commission is in the grade of Second Lieutenant, Medical Administrative Corps of the Army of the United States, or Ensign H. V. (P) of the United States Navy Reserve, the choice as to Army or Navy being entirely voluntary. Applications for commission in the Army should be made to the Corps Area Surgeon of the Corps Area in which the applicant resides and applications for commission in the Navy should be made to the Commandant of the Naval District in which the applicant resides. Medical R. O. T. C. students should continue as before with a view of obtaining commissions as First Lieutenants, Medical Corps, upon graduation. Students who hold commissions, while the commissions are in force, come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service Act. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education and at least 12 months of interneship.

II. RECENT GRADUATES

Upon successful completion of the medical college course, every individual holding commission as a Second Lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the Adjutant General, United States Army, Washington, D. C., for appointment as First Lieutenant, Medical Corps, Army of the United States. Every individual holding commission as Ensign H. V. (P), U. S. Navy Reserve, should make immediate application to the Commandant of his Naval District for commission as Lieutenant (J. G.) Medical Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant, (J. G.) in the regular Medical Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

III. TWELVE MONTHS INTERNES

All internes should apply for a commission as First Lieutenant, Medical Corps, Army of the United States, or as Lieutenant (J. G.) United States Navy or Navy Reserve. Upon completion of 12 months interneship, except in rare instances where the necessity of con-

tinuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity; as medical officers; those who failed to apply for commission are liable for military service under the Selective Service Acts.

IV. HOSPITAL STAFF MEMBERS

Internes with more than 12 months of interneship, assistant residents, fellows, resident, junior staff members, and staff members under the age of 45, fall within the provisions of the Selective Service Acts which provide that all men between the ages of 20 and 45 are liable for military service. All such men holding Army commissions are subject to call at any time and only *temporary deferment* is possible, upon approval of the application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable. All such men holding Naval Reserve commissions are subject to call at any time at the discretion of the Secretary of the Navy. Temporary deferments may be granted only upon approval of applications made to the Surgeon-General of the Navy.

All men in this category who do not hold commissions should enroll with the Procurement and Assignment Service. The Procurement and Assignment Service under the Executive Order of the President is charged with the proper distribution of medical personnel for military, governmental, industrial, and civil agencies of the entire country. All those so enrolled whose services have not been established as essential in their present capacities will be certified as available to the Army, Navy, governmental, industrial, or civil agencies requiring their services for the duration of the war.

V. ALL PHYSICIANS UNDER FORTY-FIVE

All male physicians in this category are liable for military service and those who do not hold commissions are subject to induction under the Selective Service Acts. In order that their service may be utilized in a professional capacity as medical officers, they should be made available for service when needed. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, by those who are (a) over 45, (b) physicians under 45 who are physically disqualified for military service, (c) women physicians, and (d) instructors and those engaged in research who do not possess an M. D. degree whose utilization would make available a physician for military service.

Every physician in this age group will be asked to enroll at an early date with the Procurement and Assignment Service. He will be certified for a position commensurate with his professional training and experience as requisitions are placed with the Procurement and Assignment Service by military, governmental, industrial or civil agencies requiring the assistance of those who must be dislocated for the duration of the national emergency.

VI. ALL PHYSICIANS OVER FORTY-FIVE

All physicians over 45 will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those agencies.

The maximal age for original appointment in the Army of the United States is 55. The maximal age for original appointment in the Naval Reserve is 50 years of age.

All inquiries concerning The Procurement and Assignment Service should be sent to The Executive Officer, 5654 Social Security Building, 4th and Independence Avenues, S.W., Washington, D. C., and not to individual members of the Directing Board or of committees thereof.

SIGNIFICANCE OF HEMATURIA*

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Bleeding from any part of the urogenital tract may give rise to a mixture of blood and urine known as hematuria. Many physicians

*Read before the Medical Society of Delaware, Wilmington, October 7, 1941.
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refer to those cases in which enough blood is present to be macroscopically visible. It should, however, apply to all cases of blood in the urine. The presence of microscopic red blood cells may be a sign of grave lesions in the genito-urinary tract. Blood in the urine is seldom visible to the naked eye, until there are ten million cells per cubic centimeter. Gill of the United States Army recommends the Stone-Burke color test***for hematuria in those cases where blood is not visible macroscopically. Sometimes five million cells give a suggestive pink color, but two million are completely invisible upon macroscopic examination. Microscopically only one or two red cells, and sometimes none, are found in the high power field when the urine contains only five thousand erythrocytes per cubic centimeter. Gill found that the Stone-Burke test was sometimes more sensitive than microscopic examination. The technique of this test can be found in the Year Book of Urology of 1940.

The occurrence of hematuria is very frequent as one would expect from its numerous etiologic factors. Therefore one cannot emphasize too strongly the importance of ascertaining the source of bleeding in all cases of hematuria. Blood in the urine neither indicates the part of the tract from whence it comes, nor its origin. A careful clinical history, the urinary findings, and the general physical examination of the body as a whole, and particularly of the urinary tract, must all be used as adjuncts in answering these two important questions: important because no therapeutic measures can be employed before the source of the bleeding and its causes are known. The solution of the problem as to the source of the bleeding, in some cases, is a very simple one. In others, it may require a careful examination of the body in general, combined with every diagnostic resource at our disposal for the localization of lesions in the genito-urinary tract.

A very convenient clinical division of the various sources of hematuria is:

1. Systemic causes.
2. Lesions of the viscera immediately adjacent to the urinary tract, for example, the appendix, colon and the female genitalia.
3. Lesions of the genito-urinary tract proper. Of these three groups of causes, the last named (genito-urinary lesions) constitutes about two-thirds of all. The sources of the bleeding in this group are about equally divided between the upper and lower portions of the genito-urinary tract.

The order in which a search for sources of hematuria is usually made as follows:

(a) Search for a source, in a well-taken clinical history, combined with a thorough examination of the body in general.

(b) A complete study by a urologist, of the genito-urinary tract, eliminating in succession every possible lesion in the third, or genito-urinary group, enumerated above.

SYSTEMIC CAUSES

1. *Hemophilia.* A patient suffering from hemophilia may complain of hematuria and this be the only local manifestation of the underlying systemic change. This occurred in twenty of Locke and Minot's cases of hemophilia. One must, however, not overlook the possibility of a true hematuria, for example, from a renal lesion and a concomitant hemophilia. In taking the history of a case of hematuria, the occurrence of ecchymoses after slight injuries is very significant. One should never fail to determine the coagulation time of the blood as soon as possible. If beyond, that is longer, than eight minutes, it may be termed delayed.

2. *Erythemia* (true polycythemia). Hematuria is not an infrequent accompaniment of the enlarged spleen found in this condition.

3. *Purpura Hemorrhagica.* Hematuria may occur as an accompaniment of the skin ecchymoses or independent of these. The bleeding may be from the kidney alone or one may be able to see large confluent or discrete submucous areas of hemorrhage, cystos-

***Stone-Burke Test for Hematuria. The test, using orthotolidine as the indicator, is performed by making up the following reagents—

Solution No. 1

Orthotolidine	0.5 gm.
Methyl alcohol C. P.	50. cc.

Solution No. 2

Glacial acetic acid	15 cc.
Hydrogen peroxide	30 cc.

To 2 cc. of urine add two drops of solution No. 1 and mix thoroughly by shaking. Then add 3 drops of solution No. 2. (1) A greenish-blue in the sediment of the centrifuged urine and persisting for 1 minute denotes the presence of approximately 1,300 to 1,500 red blood cells per c.c. of urine.

(2) A deeper blue persisting one minute indicates 4,000 to 7,000 red blood cells per cc. of urine.

(3) A deep blue persisting 2 minutes or longer indicates 15,000 to 20,000 red blood cells per cc.

copically. In the clinical history, one will often learn that slight trauma was followed by subcutaneous ecchymoses, which were out of all proportion to the injury.

4. *Leukemia.* Hematuria was observed in fifteen per cent of one hundred and thirty-five cases by Locke and Minot.

5. *Scurvy.* Hematuria has been occasionally observed in this condition in adults. It is not at all rare in children, both in scurvy and acute leukemia.

6. *Hodgkin's Disease.* In three cases in which the external manifestations of the disease were slight, there was ahematuria.

7. *Hematuria after High Protein Diet and After Exertion.* Newburgh and Squier found red blood cells in the urine after high protein diet. Similar findings have been reported in children after exercise. Schulte and Noltring found red blood cells in the urine of eighty-four per cent of fifty normal individuals and in ninety per cent of men over thirty-five.

8. *Drug poisoning.* The administration of turpentine, catharides, urotropin, etc., will often produce rather extensive hematuria. With the introduction of sulfanimides numerous authors have reported hematuria after its administration, particularly in the use of sulfapyridine. For example, Nissen in the Fredericksburg Hospital in Copenhagen, found on daily examination of the urine of forty-one patients, mostly suffering from various types of pneumonia and all being treated with sulfapyridine, that fifteen developed rather profuse hematuria and microscopic red cells were found in the urine of ten. The urine after a few days' intensive treatment with sulfapyridine often changes from a dark to a reddish-brown, a slight hematuria may escape observation unless daily tests are made. If the indication for the continuance of the sulfanimide group is not vital, then discontinuance should be advised on the slightest degree of hematuria. It is interesting to note that hematuria is rather a common incident in the treatment of various diseases with the sulfanimide group of drugs. Hematuria may occur within a few hours after the administration of sulfapyridine, or may be delayed from six to seven days

Children are probably more susceptible to kidney complications, and more care should be taken in pediatric cases. The essay on diagnostic values of adult hematuria, by Baruch and Pennock of the University of Pittsburgh, based on a study of three thousand specimens of urinary sediment from six hundred and eighty-one ambulatory patients, which made up a group of cardiac, vascular, circulatory, renal, gastro-intestinal, and other non-acute types of diseases. This study did not include gross hematuria, such as occurs in forty to sixty per cent of patients whose disorders are finally diagnosed as surgical conditions of the genito-urinary tract. By using the Stone-Burke test, one-third of these six hundred and eighty-one general medical cases were found to have occult hematuria. It was found to be less common in youth, and more common in the female on account of the greater sources of bleeding in the generative tract. Seasonal variation pointed to high incidences during the summer months.

Albumin and occult blood are found independent of each other, each having its own significance. Arsenic in therapeutic doses does not cause occult bleeding. In persistent occult hematuria, hyperchromic anemia is common. A review of the types of cases in which the strong reactions occurred revealed that these were more pronounced in the clinically serious types of disease.

HEMATURIA DUE TO LESIONS OF ADJACENT STRUCTURES

1. *Appendiceal Hematuria.* We can no longer regard the hematuria (whether microscopic or macroscopic) which precedes, accompanies, or follows an attack of acute or recurrent appendicitis, as of purely local origin. A certain small proportion of cases are due, no doubt, to the close proximity of the appendix to the ureter, the infection being transmitted either by contiguity of the structures or by way of the lymphatics. In the majority of cases, however, there is ample clinical evidence to show that the hematuria is the result of an acute or subacute glomerulonephritis, due to a hematogenous infection of one or both kidneys. Since we know that a unilateral nephritis is not rare, the knowledge of such a unilateral or bilateral infection, serves to clear up many hitherto puzzling

clinical observations. We refer to cases (a) in which the hematuria precedes the acute appendicitis symptoms; (b) in which it is observed first on the right side and after the subsidence of the attack of appendicitis, or perhaps from one to two weeks after an appendectomy, recurs, and is found to come from the left kidney, or (c) the blood is noted as bilateral, during or shortly after, the acute attack. It must not be forgotten that an appendicitis and a lesion in the urinary tract may coexist.

In cases presenting symptoms of subacute or chronic appendicitis, the most important ureteral condition to be excluded is stricture, which may present the same clinical symptoms as a chronic recurrent appendicitis and the same microscopic and occasionally even macroscopic hematuria, as in an appendiceal lesion.

2. *Menstrual Hematuria.* This is a form of vicarious menstruation of which little is known by the profession in general. In a series of two hundred and one cases of vicarious menstruation collected by Roth, it was vesical in nine and renal in two.

LESIONS OF GENITO-URINARY TRACT

The detection of the source of bleeding may be very easy, if the lesion is in the lower portion of the urinary tract, because of its accessibility to urethro-scopic and cystoscopic inspection. On the other hand, a prolonged search, with exclusion of one cause after the other, may be needed in the majority of cases of hematuria due to foci in the upper urinary tract. Every diagnostic resource must be employed in a more or less routine manner by the urologist, and not until all the data have been gathered and compared, should a conclusion be reached. We have found that if one visualizes in a diagrammatic manner the various lesions in the genito-urinary tract which can give rise to hematuria, the problem of exclusion is greatly simplified. A few of the more salient features of some of these lesions will be repeated here.

A. Renal Sources of Hematuria.

1. *Polycystic kidney.* This condition may present itself clinically under the picture of persistent hematuria, often only of microscopic character, or as a massive hematuria, in both instances, from either one or from both kidneys. The essential diagnostic features are the evidence of nitrogen retention in the blood, diminution in function, the peculiar "dragon-like" deformity in one or both pyelograms, and occasionally the ability to palpate nodules on the surface of one or both kidneys.

When hematuria is present, it may be a difficult matter to establish its relation with a cystic condition of the kidney. A new growth in the perineum or pelvis will produce exactly the same symptoms; in the pyelographic appearance, in both conditions, it is practically identical. The passage of blood clots through the ureter produces colicky pain similar to those caused by the excretion of a stone, but this does not infrequently occur when a tumor is present, so that it cannot be regarded as a diagnostic point of value except in conjunction with other more positive indications. It is quite evident, therefore, that the lesion can be very difficult to establish even when all the most modern methods are employed and with the greatest diagnostic skill.

2. *Tuberculosis* (Renal). In a small proportion of cases, the first symptoms of this disease is hematuria, following the breaking down of minute foci close to the renal pelvis. There is another form in which a symptomless hematuria is the principal feature. In this second variety, there is a nephritis on a tuberculous basis revealing but little change on naked eye inspection of the removed kidney.

3. *Movable Kidney.* The acute congestion following the dropping of the kidney with kinking of its ureter, is at times followed by hematuria so often seen in cases of renal neoplasms.

4. *Infections of the Parenchyma, Renal Pelvis and Ureter.* That any one or all of the ordinary pyogenic infections of the parenchyma, renal pelvis and ureters, can give rise to hematuria, is now generally accepted. In the case of infections of the parenchyma, the underlying cause is a nephritis on an infective basis, with resultant injury to the glomerular circulation. In the cases in which the infection of the renal pelvis or ureter predominates, the most common pathologic change is the appearance of multiple minute

nodules of an inflammatory character, a condition now referred to as granular pyelitis or ureteritis. We often see the same changes as the cause of persistent bleeding from the vesical mucosa.

5. *Neoplasms of Parenchyma, Kidney Pelvis or Ureter.* The only reason for mentioning neoplasms of the parenchyma, kidney pelvis and ureter again, is that the progress which has been made during the last five years in urography, enables the urologist to make a diagnosis of the presence of a neoplasm, from the deformity shown in the pyelogram or ureterogram, at a period when it is often impossible to palpate any change in the size or contour of the kidney. Familiarity with the normal conditions is essential here, as elsewhere, in the interpretation of roentgenographic changes.

6. *Lesions of the Renal Papillae.* Comparatively insignificant lesions, such as small angiomas or fibrous changes in the papillae, have been found to be the sources of hematuria in a fairly large number of cases.

7. *Renal Calculi.* In a certain percentage of so-called silent cases, the only indication of the presence of a calcalus, is a persistent or recurrent hematuria of variable severity. The same is true to a lesser extent of ureteral calculi. Although vesical calculi may be the cause of hematuria in children, as a rule, pyuria predominates in the clinical picture.

8. *Hydronephrosis.* Hydronephrosis is not usually thought of as a source of hematuria. The bleeding may be quite severe and the initial symptom, as in a recent case on our service at the Jefferson Hospital, in which a sudden onset with hematuria as the predominant feature, was followed by a rapidly enlarging hydronephrosis, stricture of ureter kink at the outlet of the renal pelvis.

9. *Embolism and Thrombosis of the Main Renal Vessels.* A hematuria may be the symptom of a blocking of the renal artery or vein in nonsuppurative thrombosis and embolism. In a recent study of twenty-nine cases, there were eight cases of gross and one of microscopic hematuria. A gross hematuria of three weeks' duration was the chief complaint of one patient. The urographic deformity resembled that of a neoplasm, because of the presence of masses of fibrinous exudate in the renal pelvis.

10. *Nephritis Hemorrhagica* (Nephrite Hematurique). Although the pathologic changes are bilateral, as a rule, one of the following clinical pictures may be present: unilateral hematuria throughout the period of observation; hematuria at first from one kidney, later from the other, or bleeding from the two kidneys at the same time.

There are few if any findings pointing to the kidney as the source of the blood, that is, an absence of edema, a rise in blood pressure, heart changes and rarely any casts or albumin between the attacks. The general condition is good, and there is no change, in the renal function or blood chemical findings. In some cases, evidence of nephritis may develop later, but at the period when one would welcome such evidence, it is absent. Ureteropyelography also fails to reveal anything abnormal. These are the cases to which attention has already been directed as to caution in the interpretation of the normal pyelograms. In approximately a fourth of the cases of hemorrhagic nephritis, the hematuria is either accompanied by pain or is preceded or followed by it. The pain may be colicky and may resemble in its severity, accompanying reflex nausea and vomiting, as well as in its radiation, the syndrome so familiar in calculous obstructions of the ureter. The pains may occur without hematuria, as an independent condition, known as nephritis dolorosa.

Instead of being colicky, the pain may be dull and aching in character, localized over one kidney and accompanied by the more or less constant presence of red blood cells in the urine. From time to time, the pain again becomes more colicky, and the hematuria increases correspondingly, in severity.

It is this last group of cases, to which the term "essential hematuria" was formerly applied. This has fortunately been discarded in favor of terms such as "hemorrhage from minute foci."

B. Ureteral Sources of Hematuria.

1. *Neoplasms.* These rank first, but as was stated, they are uncommon as compared to renal neoplasms. The papillomata are usually implantation metastases following a

primary growth in the renal pelvis. The carciomata can arise primarily in the ureter and present hematuria as their first symptom.

2. *Ureteral Strictures.* Although Hunner maintains that both a macroscopic as well as microscopic hematuria, is frequent, such has not been our experience.

3. *Ureteral Calculus.* Microscopic hematuria is a frequent accompaniment of this condition, but a gross (naked eye) hematuria, occurs far less frequently, than in the case of renal calculi.

4. *Ureteritis.* Independent of strictures, hematuria is frequently observed in cases of ureteritis granularis or cystica, less often in other types of chronic inflammatory change.

C. Vesical Sources of Hematuria

1. *Neoplasm.* These are the first to be considered, as the source of vesical bleeding. Of all of the types of neoplasms which give rise to persistent hematuria, both microscopic and gross, the benign papilloma is the most frequent, next the papillary carcinoma and last of the three, the infiltrating variety of carcinoma as well as sarcoma. Benign neoplasms also give rise to hematuria, but it is minimal as compared to the above.

2. *Adenoma and Carcinoma of the Prostate.* A severe hematuria, even to the extent of causing the bladder to be overdistended with blood, may be the first symptom of these two types of enlargements of the prostate. With the exception of such an occasional severe initial bleeding, hematuria is not an outstanding feature of prostatic enlargement.

3. *Calculus.* This is a frequent source of hematuria, of moderate degree. The bleeding is often the result of the trauma inflicted upon the mucosa by movements imparted to the calculus, by the contractions of the bladder wall.

4. *Simple and Tuberculous Ulcers.* These are a common source of microscopic bleeding.

5. *Acute and Chronic Cystitis.* Hematuria can be a prominent symptom of certain types of acute cystitis, like the acute hemorrhagic. It is infrequent in the chronic forms, except in cystitis granularis or cystica.

D. Urethral and (Male) Genital Sources.

Hematuria, due to neoplasms, such as benign papillomata and carcinomata, hematuria from urethrogenital sources is rarely macroscopic in character. Sources other than neoplasms, such as, stricture of the urethra, chronic anterior or posterior urethritis without stricture and chronic prostatovesiculitis (bloody ejaculations).

I would like to mention two conditions in which the urine has the macroscopic appearance of hematuria. For example, one has partaken of the vegetable beets. The urine is red without any other symptoms. This is known as anthrocyanin. The other condition is hemoglobinuria, which is characterized by blood pigment (methemoglobin) in the urine with the red corpuscles, and resulting from laking of red cells within the vessels. Ordinarily, a small amount of hemoglobin, less than six one-hundredths grams per kilo of body weight, may be present in the circulation without passing through the kidney, but in conditions where there is extensive red cell damage, and the blood destroying organs are unable to function properly, hemolysis takes place in the blood stream and hemoglobin appears in the urine. Macroscopically the urine simulates that of old bleeding. It is reddish-brown mahogany, brownish black, or black, and on standing considerable pigment settles to the bottom of the vessel. This condition is frequently noted in severe attacks in children's diseases; for example, scarlet fever, diphtheria, and a rare form of sepsis in the newborn known as Winckel's disease. Erysipelas, syphilis, yellow fever, typhoid, and certain parasites, especially malaria, are also factors in the production of hematuria. We have noted occasionally this condition after mismatched blood in transfusions. It has also been seen following burns, on the administration of drugs, such as arsenic, phosphorous, oxalic acid, potassium chlorate and phenol.

Hematuria in children, when it is macroscopic in character, is startling and as a rule the parent brings the child to the physician immediately. Unfortunately, many physicians, as in the case of hematuria in the adult, are unalert to the potentially serious diseases which this symptom may herald, but failure to attempt to ascertain the source of bleeding, invaluable time is lost and often the oppor-

tunity to save a life. In children hematuria is most likely to mean either nephritis, tumor, or urinary tuberculosis. Gross hemorrhage is comparatively rare with non-tuberculosis urinary infection, but is not uncommon with certain types of nephritis, and usually accompanies an acute glomerular nephritis. It has been, generally, our experience with children, where hematuria originates in the lower urinary tract, to be the result of ulceration of of congenitally stenosed urethral meatus. Hematuria originating in the upper urinary tract always demands a thorough investigation of urinary tract without delay. Hematuria from renal origin is rare in the newborn. In infants, hematuria may also be occasioned by syphilis of renal vessels. As in the adult in certain incidences, the cause of renal bleeding cannot be determined by urological examination. Thus the term "essential hematuria" comes into our vocabulary.

It is not the purpose of this discussion to take up the treatment of various types of hematuria, but I would like to mention certain new drugs added to our armamentariam in combating severe hemorrhage: (1) vitamin K; and (2) in many of our larger hospitals blood banks have been established and are in operation, where we now have access to blood plasma, which not only at the present time but for future generations will be an invaluable aid in combating severe hemorrhage.

SUMMARY

The significance of hematuria and its causes has been briefly discussed with the hope of arriving at and impressing the following points in conclusion:

1. Allow me to again emphasize the essential importance in determining, by careful clinical study and thorough urological investigation, the source of bleeding in every case of hematuria.

2. Procrastination is the great evil in cases of hemorrhage from the genito-urinary tract.

3. Gross hemorrhage may be the first and only symptom, and may subside rapidly, and the patient will remain symptomless for long periods of time, especially in neoplasm of the bladder and kidney, and during this asymptomatic stage, the lesion may progress beyond any hope of cure. An earnest appeal is made for biopsy studies, if possible, in all cases to ascertain the type and degree of malignancy of tumors in the urinary tract, especially in those in which hematuria was the early significant finding. And finally, a closer cooperation between the family physician and the urologist in giving each patient the benefit of an early diagnosis and proper treatment in all cases of hematuria.

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DISCUSSION

DR. B. S. VALLETT (Wilmington): About ten years ago a young man consulted me for an acute gonorrhea.

I found a hemangioma of the glans penis. That was removed by electrocoagulation. About nine years later I saw this young man again, with a painless hematuria. At that time I could not induce him to undergo cystoscopy, and it was another year before I saw him again, and with the same condition of painless hematuria. This time he was willing to be cystoscoped.

The family history was negative, there was no tuberculosis, no history of cancer or other debilitating diseases in the family. I thought back to the hemangioma he had had, and at cystoscopy blood was found to be coming from the left ureter. A pyelogram was made and a filling defect found in the kidney. The filling defect was very small and did not look anything like tuberculosis or cyst formation. With that history we made a tentative diagnosis of hemangioma of the kidney. I advised operation, and that is what we found on nephrectomy—a small hemangioma of the kidney. I think in that instance had we not had our history of ten years duration we would have just been put to it to have made a diagnosis.

I think another important thing is a thorough study of the blood. Dr. Richard Chute in the New England Journal of Medicine just reported a case of a robust young man whom he operated upon for renal calculus.

The stone was very easily removed. It was an extrarenal stone. The man did fine for about four days and then suddenly developed severe hemorrhage from the kidney, and to Dr. Shute's surprise, in doing blood studies, he found that there was almost an absolute prothombin deficiency in the blood, and the clotting time was something like 30 minutes. He immediately gave the patient blood transfusions and vitamin K, and he did save that particular man.

I would like to cite another case, one of my own. A robust man, about 29 years of age, was referred to me with a solitary renal calculus. He was a fine-looking specimen. He had an osteomyelitis, multiple lesions, back in the teens. Without very much study I operated on his left kidney and removed the stone. I believe in his case there must have been latent infection because he developed a fulminating infection, an infected kidney, and had repeated hemorrhages, and despite the blood transfusions we lost him.

I think that that teaches the lesson that where you have a stone you usually have a concomitant infection and a good course of sulfanamides or chemotherapy is certainly indicated where you intend to do any renal surgery. In this particular locality I believe that the chief cause of hematuria is infection.

I was glad to hear Dr. Kinney mention benign lesions of the abdomen as a cause for hematuria. I have seen several cases of infectious granuloma of the large bowel which had become plastered to the posterior wall of the bladder, producing hematuria.

I saw an interesting case not long ago in an adult with hematuria about two weeks following measles. I cystoscoped him twice within a period of two weeks and the lesion cleared up at the second cystoscopy. All of the other findings were negative.

Another interesting case—I don't want to bore you to death with case reports, I want to try to make this very brief—was a young man who had just acquired a motorcycle, and one Sunday afternoon he took it out on some of these country roads, and after joggling up and down for two or three hours he was admitted to the hospital with a gross hematuria. We did a complete study on him, and his bladder was clean as a whistle, his pyelograms were clean, and on expectant treatment he cleared up completely.

I just saw a draftee that was referred because of a few red blood cells in the urine, and on cystoscopic examination he was found to have but one kidney, and as Dr. Kinney pointed out a minute ago, we found that the source of those red blood cells was in the prostatic urethra, and it was not coming from his solitary kidney.

Here is an interesting observation of strenuous exercise giving hematuria. In reading Howell's Physiology we note that during violent physical exercise there is an increase in the leucocytes, sometimes as high as 35,000. The sulfanimide drugs will sometimes confuse you, particularly in acute gonorrhea; if the patient is having bleeding from the posterior urethra you will not know whether the drug has caused it or whether it is coming from the acute infection. Of course the thing to do is stop the drug, and if it is due to the drug the bleeding in all probability will stop. If it is due to gonorrhea, readminister the drug. We found in one case that the bleeding cleared up despite the continued administration of the drug.

I think the small stones are very confusing in diagnosis and often lead to an erroneous diagnosis. It is very hard, particularly with the non-opaque stones, to track them down.

Dr. Kinney spoke of the mismatched blood transfusions as causing hematuria and I think along that line the recent work of Dr. Hepsky's is interesting, in which he has isolated the carbohydrate and found that even two milligrams per 500 cc. of old blood can be administered to A and B recipients without any bad effects whatsoever.

I just want to terminate this by saying that it is always a pleasure to listen to Dr. Kinney. I have always thought highly of his work and always enjoyed hearing him talk. I have seen some of his work in children. One case, where he did a transplantation of ureters, was some of the prettiest work I have ever seen.

DR. L. W. ANDERSON (Wilmington): Mr. President, I enjoyed Dr. Kinney's most ex-

cellent presentation very much, and I do not feel that I can add anything to it.

I would like to ask Dr. Kinney, however, if he has had bleeding following transurethral resection, where we did these operations ten or twelve years ago, on cases with a massive hypertrophy. I have had occasions where the patient has come back with bleeding, and on cystoscopy I would find that they were bleeding, I would say, probably where the veins or the arteries had broken down.

There is one other thing of course to consider in this, and that is cancer. However, some of these cases have been bleeding from time to time for the past six or eight years. One other question I would like to ask Dr. Kinney: in examining these cases when does he do his cystoscopy or prefer to do it, when the patient is bleeding, or after the bleeding has ceased?

Occasionally we will have such cases referred with a history of having bled from time to time, and this would cease. At the time you do a complete study the patient would not be bleeding and you would not be able to see the source of the bleeding, that is, whether it is coming from the right or the left kidney, or from the bladder.

Dr. Kinney mentioned about removing stones from the urethra and making x-rays. At the time of the operation I have found that if you will pass a catheter up the ureter before you take the patient to the operating room, and as it were wedge the stone, under spinal anesthesia, this pressure will hold the stone relatively in place.

DR. V. D. WASHBURN (Wilmington): Mr. President, Gentlemen: I feel that we are indebted to Dr. Kinney for a very interesting and worthwhile presentation of an important subject, a reminder that hematuria is a subject which should not be neglected, a reminder that there is already a sufficient lag occurring between the time that the patient discovers his hematuria and the time that he is willing to do something about it. If the medical profession at large realizes that it is imperative that studies be made at once, and if the medical practitioner refuses to tolerate delay on the part of the patient, that delay can be done away with in many instances.

I wish to speak of perhaps another source of hematuria, and that is this present war, which has cut off our supply of urethral catheters made both by the Germans and the French, and which have not been equalled in quality by those made by American manufacturers. This is a very serious thing to those of us who are practicing urology. The catheters which are at our command made from neoprene, are amazingly durable, will boil and boil and boil, month in and month out, and will not become soft, and that is a very real disadvantage. We recently had a patient in a hospital at Wilmington admitted because of gross and profuse hematuria. His story was that he had had a retention, outside. Someone attempted to catheterize him and failed, and he was brought in, cystoscopy was attempted, and it was impossible. The bladder was opened, and it was found that a hole had been pushed right through the prostate by a hard rubber catheter.

We likewise are now facing a very serious situation in the type or the quality of the urethral catheters which are now at our command, made in this country. There is an epidemic, if I may speak of it in that way, of urethras being punctured by men of unquestioned skill and experience simply because the catheters that are now available are so rigid and so unyielding that the force that was sufficient to bend the foreign-made instrument does not bend the American-made instrument and damage is done, and actual puncturing of the urethra. These observations may not be in point, but they do serve to bring to our minds the difficulty that the war has brought to our doors.

Let me speak of one other point which perhaps may have a bearing, and that is that occasionally it is a matter of exceeding difficulty to determine the source of bleeding in a female. A woman will be quite certain that she has hematuria, and the woman will be intelligent and the questions will be clearly answered, but the fact remains that there is still uncertainty. I have had that experience several times, and I speak of it so that perhaps it may save you some difficulty some time. Perhaps you have thought of it the same way.

I instruct these women to observe when they appear to be passing bloody urine, and

have it done in the hospital, and when that occurs they are instructed to stop voiding, to notify the nurse, and they are immediately catheterized. Then the matter is definitely settled. They either have hematuria at that time or they do not.

Again I thank Dr. Kinney for bringing this very important subject in such a way.

DR. KINNEY: Mr. President, it is gratifying to me to know that the presentation of this paper has stimulated such interesting discussion.

Allow me again to make an appeal for the elimination of procrastination in hematuria. This is one of the great evils that the medical profession are guilty of even to this day.

I appreciate very much Dr. Vallet's discussion.

In answer to Dr. Anderson's question as to the incidence of bleeding after transurethral resections of the prostate, I will say that we encounter this quite frequently. A careful attempt to coagulate each bleeding point through the resectoscope at the time of operation should be carried out, and we have been using the inflated Foley catheter after operation which acts as an excellent means of controlling hemorrhage.

Careful cystoscopic study should be the guiding point in all cases of transurethral resection of the prostate, and this investigation will often enable one to choose the proper type of operation. In certain types of prostatic enlargement the gland may be so vascular that it would be a very hazardous procedure to attempt to remove the gland by transurethral resection, due to the grave danger of bleeding. I think Dr. Washburn, Dr. Anderson and others will recall the report of such a case by Dr. Shivers, of Atlantic City, which he reported at the Philadelphia Urological Society last year, where it was necessary to perform a suprapubic prostatectomy in order to control the bleeding.

In regard to cystoscopy during active bleeding and during the interim. I think it is like the proverbial toothache—the minute you are ready to submit the patient to cystoscopic study the bleeding stops, either, the same day or a few hours before examination. I do not think, however, that this should deter one from going ahead with the regular routine studies in the search for the source of the bleeding, using every method at our command to search the entire urinary tract. If the bleeding is coming from the upper urinary tract, and it is in the interim stage, a careful intravenous urogram or a retrogarde pyelogram should be carried out; and further, a careful indigo carmin dye elimination should be ascertained by cystoscopic study. This will generally show that one side or the other is below functioning power and the subsequent pyelograms will as a rule manifest lesions in the upper tract.

Careful examination of the urine, watching it from day to day, will often give us the go ahead signal for cystoscopic examination.

In regard to the question of the motility of ureteral stone, this is common, and when the ureteral catheter is passed the stone is frequently pushed back into the pelvis of the kidney. This will of course cause immediate remission of symptoms such as pain and renal colic until such time as the calculus again moves or becomes obstructive.

Dr. Washburn's discussion in regard to our American made ureteral catheters is a very timely one, and extreme care should be carried out in passing ureteral catheters of American make on account of their inflexibility. Only the other day we saw a patient, a woman, whose right ureter had been punctured during ureteral catheterization, with quite serious results.

OBSERVATIONS ON THE KENNY TREATMENT

GEORGE J. BOINES, M. D.,*
Wilmington, Del.

Our interest in the Kenny method for treating infantile paralysis in the acute stage began with my visit to the City Hospital in Minneapolis, October 17 and 18, 1941, when the method was demonstrated by Sister Kenny and her assistants. On October 29, 1941, we began to apply this method on 16 patients who were admitted to the Doris Memorial Hospital, the communicable disease unit of the Wilmington General Hospital. Some of these patients were on ward service and the others were private patients who were turned over to us for treatment.

In the past ten years we treated this disease

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with the usual methods, that is, complete rest in bed, with early immobilization of extremities with sand bags, and later plaster casts, plaster splints, and lately the Toronto splints. In 1937 we tried the Retan method of perivascular drainage on five very ill patients, with some improvement, but this method proved too impractical and the results not very encouraging for the amount of work and care required in carrying out the treatment. With the application of the Kenny treatment we noted immediate and almost spectacular improvement.

Sister Kenny, with her keen observation and many years of experience with this disease, noting that poliomyelitis early affects muscles, has acquired a minutely accurate knowledge of every muscle in the body. She knows the law of mechanics by which all body movements are controlled. It is this knowledge which enables her to look a patient over and detect every muscle which is spastic or which is pulling in the wrong direction. For example, stiffness of the neck and back has been a common symptom in the paralytic types of this disease. The usual explanation of the old school has been that these signs are due to inflammation of the meninges over the posterior nerve roots, which causes pain when the spine is flexed. Sister Kenny on the other hand, points out that these signs are caused by the disease affecting the muscles and rendering them spastic. This means that the child cannot raise his head because there is a contraction of the neck muscles (rectus capitus major and minor) and because the opposing group (the sternocleidomastoids) cannot contract due to the pulling of the posterior groups.

This was very well illustrated in six of our cases. These children came in with rigid necks, and when asked to lift the head they attempted to raise themselves up by contracting the platysma and lowering the chin. Within one week after the hot fomentations were applied to the entire back from the base of the skull to the tip of the spine, the neck muscles were relaxed, and within four to six weeks they were able to sit up in bed unassisted. Such recovery was never witnessed before on such cases. Just what the exact physiology of the fomentations is I cannot say, but the rapid recovery of the so-called paralyzed muscles within a few weeks would lead one to believe that the Kenny method is the one of choice for restoring function to diseased muscles and for preventing deformities. Sister Kenny's explanation may not fit in with the pathological spinal cord changes that we have been taught exist, but other opinions in this field seem to indicate that the last word has not yet been said as to the parts played by the "contractile" nerve fibers and the "tonicity" nerve fibers in muscle function.

Since many workers have now admitted that immobilization of limbs and muscles causes ischemia, fibrosis, and destruction of muscle fibers as well as irreparable joint changes, it is hardly necessary to devote much time to the benefits derived by discarding immobilization. In our clinic it was clearly demonstrated on two cases (onset 8/28/37 and 9/27/39 respectively) who were originally patients at the Doris Memorial Hospital and who came as out-patients for Miss Kenny to examine. Both patients showed advanced damage to muscles and joints so that they were still unable to raise themselves, turn over in bed, or walk without assistants or the aid of braces. These patients have been receiving the best orthodox treatment possible by competent physicians and physical therapists since the onset. In our newest group, similarly and more severely paralyzed cases showed no deformity, were able to sit up, turn over in bed, and three cases walked within six weeks after the Kenny therapy. It is true that some muscles need more re-education in our cases before they would be completely cured, but even at this stage they are at least able to take care of themselves. It may be well to note also that sedatives and narcotics were necessary to ease pain in several of our earlier cases, which drugs were not needed after the Kenny method was instituted. Thus the Kenny method properly applied means maximum comfort and recovery without the use of casts, splints, sand bags, braces and respirators within a practically short period of time when compared to the months and years required by the orthodox method.

Some of the articles published on the Kenny

treatment have already caused considerable misunderstanding as to the main theories behind the treatment. Mills (British Medical Journal, 1938) reports excellent results on 37 acute hospitalized cases and 1400 outpatients, but even though he states that only careful passive movements are permitted until the muscles regain their strength, the fact that his patients were put on their feet and walked within a few weeks and because he moved the joints through their entire arc of movement, one gets the impression that active massage and movement are the chief points in the treatment. Hanson (J. A. M. A., 1937) who read the article states that, "I fail to see the rationale of Sister Kenny's treatment and it is difficult to subscribe to the conception of pathology on which it is based. My own theory of the after-treatment of poliomyelitis lies somewhere between the extremes described by Sister Kenny and the Kendalls." However, Hanson had not seen any of the Kenny patients and had not tried it himself.

The J. A. M. A. editorial, (Dec. 6, 1941, p. 1981) states that, "massage and freedom of movement are clearly indicated if all available motor units in paretic muscles are to retain their maximum physiologic capacity." This is contrary to Sister Kenny's treatment and misleads one who has not seen the treatment. Miss Kenny states that massage exaggerates the reflexes and increases the spasm, and she always emphasizes that movements must be guided and controlled by the operator.

Dr. Lewin (Illinois Medical Journal, August, 1941) attempts to describe the Kenny method of applying the fomentations and states, "In the acute stage Miss Kenny employs hot applications. Woolen strips saturated with boiling water are 'fished out' with a pole and run through a wringer twice. These are applied from one joint to another, but not over the joint, in order to permit passive and active movements." This only confuses the reader, since Sister Kenny uses pieces of blanket cut to size to fit around an arm or a leg or the back, and these are boiled in a sterilizer and from there they are picked up with a forceps and passed through a tight wringer twice before they are applied to the patient. This foment is then covered with a piece of rubber sheet followed by a dry piece of blanket and then another dry towel or white material, the purpose of the rubber sheet and dry pieces being to preserve the heat of the hot blanket. Foments are applied only over the affected parts; the joints, not being affected and being noomal, do not need any heat.

Many objections to the Kenny method seem to center about the lack of reasoning or scientific evidence "for doing what she does." This is correct, but this lack of comprehension is not new in medicine. All of us use the sulfa drugs daily for many conditions because we know from clinical experience and observation that they give us results, but the reason they do so are still theoretical and yet who would hesitate to use them because he cannot understand the complex chemical reactions in the tissues?

In a preliminary report on 27 cases treated at the Willard Parker Hospital, New York City, Dr. Stimson and his staff reported at a meeting on January 7, 1942, at the Lenox Hill Hospital the following observations in the use of the Kenny method:

1. Spasms disappeared sooner.
2. Better cosmetic effect.
3. Patients were more comfortable and happier.
4. No harmful effects.
5. No deformities.
6. Not as much atrophy of muscles.

Several orthopedic surgeons who took part in the discussion agreed that immobilization was harmful, damaging and crippling, and that spasm was present in the muscles affected. The opinion was also expressed in the meeting that we concentrated our attention too much on the diseased nerve cells and were afraid to stretch the muscles.

My observations of Sister Kenny's work in Minneapolis and at the Doris Memorial Hospital in Wilmington, when she came to examine our patients and demonstrate her method on November 21-23, 1941, are as follows:

1. Sister Kenny pointed out clearly and conclusively the symptoms of muscle spasm, muscle incoordination, and alienation on all patients, recent and old.

2. By her method of muscle analysis she detected weak and spastic muscles without moving the acutely ill patient or injuring any

muscles. Her method of detecting affected muscles is much simpler, more exact, and involves less motion in painful muscles than the orthodox method of muscle testing.

3. It was clearly demonstrated, on our Kenny treated patients, that there was no deformity, no stiff joints, nor apparent muscle atrophy. Out-patients were brought in for examination who had a comparable involvement similar to the Kenny patients, but were unable to turn over in bed, or to sit up, and had more painful muscles and more spasm. They also showed incoordination and alienation, and some muscle atrophy.

4. Chronic patients examined clearly indicated the crippling effects of the orthodox method of treatment, chiefly among them being the inability to turn over in bed; to sit up; or to stand without the aid of a brace or another person; to bend elbow or wrist, or to raise the head. Marked atrophy of hands; shortening of one leg; dropped and tilted pelvis were also noted. One patient had his arms fixed to the sides on airplane splints and was unable to move them below a 90° angle to the body.

Even though of long standing, some of these uncomfortable deformities can be helped with the Kenny treatment. A prominent symptom in the chronic patient was pain in the spastic muscles which immobilization, unfortunately, had not relieved.

5. One should not overlook the bright, hopeful, cheerful effect of the Kenny treatment on the patient, parents, and nursing attendants. The recovery of muscles noted day by day is an inspiration to the nurse and parents and very hopeful to a future recovery to the patient. The crippling effects of the old method are not only depressing and discouraging to the patients who feel hopeless and permanently helpless, but such a crippled child brings disorganization to the entire family life, because of the constant care, the sympathy and the human problems which these maturing children involve.

6. The care of the poliomyelitis patients as outlined by Sister Kenny consists of 70% nursing care and medical supervision. Orthopedic care is necessary in cases which must have corrective and stabilizing operations.

7. Another decided advantage of the Kenny treatment is that if any residual paralysis does result, the muscles are better preserved and the patient is in a better physical condition for any reconstructive orthopedic surgery which may be necessary.

8. Muscles become paralyzed early and if they are not relaxed it will be impossible for them to contract later. The hot fomentations stimulate circulation and bring more white blood cells to the affected parts which remove the toxins and virus from the body.

SUMMARY

Acute and chronic cases of infantile paralysis have been observed and the results compared between the orthodox or accepted treatment and the Kenny treatment. With the Kenny method complete recoveries were noted in five patients within six weeks; in seven patients, 90% recovery; and in four patients 75% recovery.

We believe we have good reasons for being enthusiastic with the results obtained by this treatment. It is true, on the other hand, that trained technicians are necessary to carry out the passive movements and the muscle re-education exercises. It is our aim to establish a permanent Kenny Clinic where we can have a personnel trained by Sister Kenny to handle the acute and convalescent cases of poliomyelitis in Delaware. Although we have been very fortunate in this state in having only a small number of cases each year (25 this past year), there are at the present time a larger number of old cases which have deformities that require muscle training and re-education before they can be rehabilitated as self-sustaining individuals. Fortunately the American Medical Association and the National Foundation for Infantile Paralysis have approved the Kenny method, and before long official and detailed publications as to its application will be published so that this method may be more generally understood and employed.

Editorial

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WAR-TIME IMMUNIZATION

War, especially this war, always brings danger of epidemics. The increased movement of military forces and of civilians into this area the possibility of evacuation of children and adults, crowding in emergency evacuation centers, and the inevitable relaxation of medical supervision in time of emergency all bring threats of epidemics.

Bombing or sabotage may damage our water system, making temporary use of unprotected and unsafe sources necessary, with the possibility of an outbreak of typhoid or dysentery. We can effectively protect our population against three major epidemic diseases: smallpox, diphtheria and typhoid by immunization. Here in Delaware we have a false sense of security regarding smallpox. A high percentage of adults, both young and old, as well as children, have never been vaccinated, or have lost their immunity. Most of our school children have been immunized against diphtheria, but a too high proportion of infants and pre-school children are protected against neither diphtheria nor smallpox.

The best time to stop an epidemic is before it starts. The highest possible proportion of our population should be immunized against smallpox, diphtheria, and typhoid. At present we have materials and personnel; we may not have these in the near future. If done now the practicing physicians will immunize a large part of their private patients in their own offices. If neglected until the emergency comes, all will, of necessity, be done by the health department and by these same physicians, voluntarily and without remuneration.

The State Board of Health is speeding up the regular immunization work, using all available avenues of publicity. All those who can are urged to go to their own physicians; those who cannot may be immunized at the various health centers and clinics. Smallpox vaccine, typhoid—paratyphoid vaccine, and diphtheria toxoid are available, free of charge, from the State Board of Health at Dover, the county health centers, and the health centers and Board of Health Laboratory in Wilmington. The profession is urged to give this immunization campaign its fullest support.

The 1942 Directory Page appears in this issue. We ask the proper officials of each organization listed there to check this page carefully, and to send us promptly such changes as may be needed to make it 100% up-to-date. Our thanks.

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Open 10 A. M. to 5 P. M. and Meeting Evenings

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SUSSEX COUNTY MEDICAL SOCIETY—1942

Meets the Second Thursday

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J. S. McDaniel, *President and Secretary*; Wm. Marshall, *Assistant Secretary*; W. E. Bird, P. R. Smith, W. T. Chipman.

Recommendations of the Committee on Medical Economics

Approved by the Board of Directors on September 18, 1940.

In order that those who serve in the armed forces of this Country may be properly protected during and after the emergency, the Board of Directors of The Philadelphia County Medical Society makes the following recommendations:

(1) That as soon as a physician determines he is to serve in one of the armed forces, arrangements be made with another practitioner to take care of his practice. The following plan is suggested to cover such arrangements:

(A) That the physician leaving his practice send a card (Appendix *A*) to all of his patients, stating who is to be in charge of his practice during his absence and register such arrangement with The Philadelphia County Medical Society.

(B) That the locum tenens agree to the following arrangement: The moneys collected from patients who have been turned over to the locum tenens shall be placed in a separate fund. After deducting the amount necessary to cover overhead, the remaining fund shall be divided on a 50-50 basis. That when the practitioner returns from military service, the locum tenens shall refer all of his patients back to him. (Appendix *B*).

(2) That all institutional, teaching and industrial appointments held by the practitioner at the time he enters military service shall be made available to him without loss of rights, seniority or privileges when he returns from the service. Those individuals serving in such positions during the period of the emergency should feel that the acceptance of these vacancies is solely on a temporary basis.

(3) That during the period of military service of any member of The Philadelphia County Medical Society, that portion of the annual dues now retained by the Society shall be remitted. It is hoped that the State Society will do likewise.

With such a plan, both the public and the medical profession can be adequately protected and the interests of the country best served in any emergency.

APPENDIX *A*.

Dr. A. wishes to announce that because of the present emergency he is entering the military service of this country. During his absence his practice will be cared for by Dr. B. (address and telephone number). Dr. A.'s records will be available, during his absence, to Dr. B. at the request of his patients. Until his return it is suggested that Dr. A.'s patients will call Dr. B. should illness make this necessary.

APPENDIX *B*.

Dr. B. wishes to announce that Dr. A. has returned from military service and will resume his practice.

Note: This material originally appeared in the ROSTER of September 28, 1940, and is being republished at this time for the benefit of the many physicians at present being called into active military service.—*Weekly Roster* (Phila.), Jan. 17, 1942.

Can Shipwreck Survivors Live on Salt Water?

"With a sea war ahead of us, it would seem that this would be an excellent time for research to determine how shipwrecked men can improve their chance of escaping death from thirst," suggests Randolph Leigh, scientist and world traveler. In his recent expedition to the Gulf of California, recorded in "Forgotten Waters" (Lippincott) Mr. Leigh came across a case which may be the means of saving untold lives. A Mexican Indian named José Vitiriez testified to having lived eight weeks on a barren island where there was no fresh water or ordinary food. He attributed his survival to two things: immersion in salt water, and a diet of plankton—crustaceans a tenth of an inch long, which may be thought of as miniature lobsters or shrimps. Medical men to whom Mr. Leigh told the story ruled out the immersion angle, saying that salt water would rather tend to act as a poultice, drawing away the body's juices. The question then was, would a plankton diet contain the needed liquids without a fatal salt content?

Mr. Leigh submitted the question to the biology departments of California, Princeton, Harvard, and Cornell Universities, and to

the Curator of Mammals of the Smithsonian Institution. There were minor disagreements in the replies, but the consensus of opinion was that such a thing was possible. Says Dr. J. M. D. Olmsted, Chairman of the Devision of Physiology of the Medical School of the University of California, "The question is not the amount of water in salt water to keep a person alive, but the amount of salt in it to poison him...I should say that the Indian by getting his water solely from his food would probably not include enough salt to do him harm." Dr. Alfred C. Redfield, of the Biological Laboratories of Harvard University, holds that "...it would be worth while if someone would make some careful experiments as to just how much salt water the human body could deal with." Dr. J. Douglas Hood, Professor of Biology of Cornell University, writes, "My guess would be that if the plankton consisted largely of green Algae, the solute-content necessary in sea water might be maintained through the photosynthetic production of sugar molecules. If this occurs, such marine plankton, if sufficiently drained of sea water, might yield enough water to sustain human life, as well as enough carbohydrates, protein, fat and vitamins to serve as food."

Mr. Leigh believes that it is important that these experiments be made now, since if it is possible to drink salt water and live, the diffusion of that information would save hundreds of lives. He suggests a plankton net in each lifeboat, if such a thing were found practical.

The family physician occupies the key position in finding tuberculosis. He, in the final analysis, plays the most important part in the reduction of tuberculosis because the control of the disease begins in his office. L. M. Morse, M. D., *Wisc. Med. Jour.*, Mar., 1941.

The symptom complex which is commonly called the onset of tuberculosis, is not the onset but the stage of active progression, characterized by cough, fever and night sweats. Esmond R. Long, M. D.

Those Awful Printers!

The Second Rectolactor placed in service by Walker-Gordon Laboratories.—*Medical Searchlight*, September, 1941, page 11.

Correction

In our issue of December, 1941, page 244, under *Book Reviews*, a book on "Hernia," was reviewed and the author's name printed as Alfred H. Jason, M. D. This is incorrect. The author is Alfred H. Iason, M. D., THE JOURNAL regrets the error.

BOOK REVIEWS

A Primer on the Prevention of Deformity in Childhood. By Richard B. Raney, M. D., Associate in Orthopedics, Duke University. Pp. 188, with 88 illustrations. Cloth. Price, $1.00. Elyria, Ohio: National Society for Crippled Children, Incorporated, 1941.

This is not a textbook of orthopedics, but a manual that gives specific directions aimed at the prevention of deformity in childhood, of which seventeen causes are discussed. The style is clear and concise; technical terminology is avoided as far as possible; the illustrations are helpful; and the glossary is included in the index. Written primarily for nurses, parents and lay co-workers in this field, this book should be a great help to the family physician also. Apparently it went to press before the Kenny treatment of acute poliomyelitis was officially recognized as definitely preventing or minimizing deformity, since no mention is made of this method, an omission that will undoubtedly be corrected in another edition. Even so, it is a good book, and we recommend it.

Woman's Personal Hygiene. By Leona W. Chalmers. Pp. 192, with 32 illustrations. Cloth. Price, $2.00. New York: Pioneer Publications, Incorporated, 1941.

This is another of the many recent books on this and kindred subjects, written for the layman, or rather, the lay woman. After chapters on pelvic anatomy and physiology, the authoress discusses uterine displacements and their sequelae, the social diseases, vaginal hygiene, marital relations, exercise, etc. The language is clear, and the meaning is plain, and also accurate. This is a safe book and can be recommended.